

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1 – 11 (cancelled).

Claim 12 (currently amended): ~~A method of managing or controlling an electric arc welding shop utilizing several welding torches (10) which comprise the steps of:~~

- ~~(i) feeding each torch at least one consumable wire (11);~~
- ~~(ii) moving each consumable wire (11) with a wire speed (V); and~~
- ~~(iii) subjecting each wire to an electrical current of intensity (I); and (I);~~
- ~~(a) wherein at least one wire speed value (V) is determined by a speed sensor, wherein said V is the average speed at which each wire (11) feeds each torch (10) over a given period (T);~~
- ~~(b) wherein at least one current intensity value (I) is determined by a current sensor, wherein said I is the average current which each wire (11) is subjected to over a given period (T); and~~
- ~~(c) wherein at least one productivity parameter selected from the group consisting of: duty factor (DF) and deposition rate (DR) is determined by said values V and I.~~

A method which may be used for remotely managing or controlling an electric arc welding shop utilizing at least one welding torch, said method comprising:

- a) feeding each torch at least one consumable wire;
- b) moving each consumable wire with a wire speed (V);
- c) subjecting each wire to an electrical current of intensity (I);
- d) determining, by means of a speed sensor, at least one wire speed value (V), wherein said wire speed value (V) is the average speed at which each wire feeds each torch over a given period (T);
- e) determining, by means of a current sensor, at least one current intensity value (I), wherein said current intensity value (I) is the average current which each wire is subjected to over said period (T);
- f) acquiring, by means of an of an acquisition means, at least one value of said wire speed value (V) and at least one value of said current intensity value (I);

- g) determining, from said wire speed value (V) and said current intensity value (I), at least one productivity parameter selected from the group consisting of duty factor (DF) and deposition rate (DR); and
- h) remotely transmitting, by means of a communication network, a value to a central remote control device, wherein said value comprises at least one member selected from the group consisting of:
 - 1) said duty factor (DF);
 - 2) said deposition rate (DR);
 - 3) said wire speed value (V); and
 - 4) said current intensity value (I).

Claim 13 (previously presented): The method according to Claim 12, wherein the shop comprises from about 2 to about 20 welding torches.

Claim 14 (previously presented): The method according to Claim 12, wherein each said torch is fed at least 1 wire.

Claim 15 (previously presented): The method according to Claim 14, wherein each said torch is fed 1 or 2 wires.

Claim 16 (cancelled)

Claim 17 (currently amended): The method according to Claim 12, wherein said method further comprises storing at least one value selected from the group consisting of: V, I, DF and DR, wire speed value (V), current intensity value (I), duty factor (DF), and deposition rate (DR).

Claim 18 (currently amended): The method according to Claim ~~[[17]]~~ 12, wherein said method further comprises a step of processing at least one value selected from the group consisting of the wire speed values (V) or the intensity values (I), before or after storage. ~~either before and/or after storage.~~

Claim 19 (previously presented): The method according to Claim 18, wherein said processing occurs before storage.

Claim 20 (currently amended): The method according to Claim 18, wherein processing each said wire speed value (V) or each said intensity value (I) consists of calculating at least one productivity parameter selected from the duty factor (DF) and the deposition rate (DR) for each torch ~~(10)~~ and/or optionally the average value of these parameters for all the torches.

Claim 21 (currently amended): The method according to Claim 12, wherein said method further comprises transmitting to a shop monitoring means at least one value selected from the group consisting of: V, I, DF and DR to the shop monitoring means of wire speed value (V), current intensity value (I), duty factor (DF), and deposition rate (DR).

Claim 22 (previously presented): The method according to Claim 21, wherein said transmission occurs via a remote transmission step.

Claim 23 (currently amended): A system for remotely managing or controlling an electric arc welding shop in which ~~several welding torches (10)~~ are at least one welding torch is utilized, each fed at least one consumable wire ~~(11)~~, each consumable wire ~~(11)~~ moving with a wire speed (V) and subjected to an electrical current of intensity (I), which comprises:

- (a) a first determination means for each torch ~~(10)~~, comprising a speed sensor for determining at least one wire speed value (V) representative of the average speed at which each wire ~~(11)~~ feeds each torch ~~(10)~~ over a given period (T) [[or]] and/or comprising at least one current sensor for determining at least one current intensity value (I) representative of the average current to which each wire ~~(11)~~ is subjected over the given period (T); and
- (b) a second determination means that cooperates with the first determination means in order to determine, from at least each speed value (V) of the wire ~~(11)~~ or each intensity value (I) of the electrical current determined by the first determination means, at least one productivity parameter selected from the duty factor (DF) and the deposition rate (DR) for each torch ~~(10)~~ of the shop and/or optionally the average value of these parameters for all the torches of the shop~~[[.]]~~;

- (c) a remote transmission means which cooperates with a communicating network for remotely transmitting data to a central remote control device, wherein said data comprises at least one member selected from the group consisting of:
- 1) said duty factor (DF);
 - 2) said deposition rate (DR);
 - 3) said wire speed value (V); and
 - 4) said current intensity value (I); and
- d) a central remote control device for saving, analyzing, and/or processing at least part of said remote transmitted data.

Claim 24 (currently amended): The system according to Claim 23, wherein said system further comprises storing means for storing at least one selected from the group consisting of: ~~the duty factor (DF), the deposition rate (DR), the wire speed value (V) and the current intensity (I).~~

- (a) said duty factor (DF);
- (b) said deposition rate (DR);
- (c) said wire speed value (V); and
- (d) said current intensity (I).

Claim 25 (cancelled)

Claim 26 (currently amended): The system according to Claim 23, wherein said system further comprises:

- a) a means for acquiring and/or storing at least one wire speed value (V) determined by the speed sensor and/or at least one current intensity value (I) determined by the current sensor; and/or
- b) a means for processing the wire speed values (V) and/or the intensity values (I) before and/or after storage.

Claim 27 (new): The method of Claim 12, wherein data processing and storage are associated with said sensors.

Claim 28 (new): The method of Claim 12, wherein said acquisition means is connected to said sensors by a connection means, wherein said connection means comprises at least one member selected from the group consisting of:

- a) analog communication ports;
- b) digital communication ports; and
- c) acquisition paths.

Claim 29 (new): The method of Claim 28, wherein said acquisition means acquire, store, and/or process at least some of the value sent by said sensors or by the data processing and storage facilities associated with said sensors.

Claim 30 (new): The method of Claim 12, wherein:

- a) a data processing unit processes at least one value selected from the group consisting of said wire speed values (V) and said intensity values (I);
- b) said data processing unit calculates at least one productivity parameter selected from the group consisting of said duty factor (DF) and said deposition rate (DR).

Claim 31 (new): The method of Claim 30, wherein said data processing unit is located near or in the shop.

Claim 32 (new): The method of Claim 30, wherein said data processing unit is a central computing unit.

Claim 33 (new): The method according to Claim 30, further comprising using at least one productivity parameter selected from the group consisting of duty factor (DF) and deposition rate (DR) for following, over the course of time, at least the workload of each torch.

Claim 34 (new): The method of Claim 12, further comprising using said central remote control device for extracting trends from said remotely transmitted values of said duty factor, said deposition rate (DR), said wire speed value (V), and said current intensity value (I).

Claim 35 (new): The method of Claim 34, further comprising using said extracted trends for activating an alarm or carrying out a feed back operation on at least one torch.

Claim 36 (new): The system of Claim 23, wherein said central remote control device extracts trends from said remotely transmitting data, wherein said data comprises at least one member selected from the group consisting of:

- a) said duty factor (DF);
- b) said deposition rate (DR);
- c) said wire speed value (V); and
- d) said current intensity value (I).

Claim 37 (new): The system of Claim 23, wherein data processing and storage facilities are associated with said sensors.

Claim 38 (new): The system of Claim 23, further comprising an acquisition means, wherein:

- a) said acquisition means is connected to said sensors by a connection means; and
- b) said connection means comprises at least one member selected from the group consisting of:
 - 1) analog communication ports;
 - 2) digital communication ports; and
 - 3) acquisition paths.

Claim 39 (new): The system of Claim 23, wherein said acquisition means acquire, store, and/or process at least some of the value sent by said sensors, or by said data processing and storage facilities associated with said sensors.

Claim 40 (new): The system of Claim 36, wherein said data processing unit comprises a central computing unit.

Amendments to the Abstract

Please replace the subtitle and text of the Abstract as follows:

Abstract of the Disclosure

~~Method of managing or controlling an electric arc welding shop in which several welding torches (10) are employed each fed with at least one consumable wire (11), each consumable wire (11) moving with a wire speed (V) and being subjected to an electrical current of intensity (I), in which, for each torch (10), at least one wire speed value (V) representative of the average speed at which each wire (11) feeds each torch (10) over a given period (T) is determined by means of a speed sensor or at least one intensity value (I) of the current representative of the average current to which each wire (11) is subjected over the given period (T) is determined by means of a current sensor, and at least one productivity parameter chosen from the duty factor (DF) and the deposition rate (DR) for each torch (10) of the shop and/or optionally the average value of these parameters, for all the torches of the shop, is determined from at least each speed value (V) of the wire (11) or each intensity value (I) of the electrical current obtained in step (a).~~
System for implementing the method. Methods of controlling an arc welding shop. In the shop, several welding torches are used and each are supplied with consumable wire. The wire moves at a wire speed and is subjected to an electrical current. For each torch, either an average wire speed or an average electrical current, as measured over a fixed time period, is determined by a sensor. These values then allow productivity parameters to be selected for the torches. Productivity parameters include the duty factor, the deposition rate, the average duty factor, and the average deposition rate.

Attachment: Replacement sheet